

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2011-0058

WASTE DISCHARGE REQUIREMENTS
FOR
VON BARGEN RANCH SEPTAGE DISPOSAL AREA
GLENN COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board) finds that:

1. On 15 April 2010, Scott and Sandy Von Bargaen (hereafter, Dischargers) submitted a Application/Report of Waste Discharge (ROWD) for Waste Discharge Requirements (WDR) to operate a domestic septage disposal facility on the Von Bargaen Ranch.
2. The Von Bargaen Ranch Septage Disposal Area is located approximately 2 miles southeast of Artois in Glenn County, at an elevation of 150 feet mean sea level (MSL), in Section 11, T20N, R3W (APN 020-030-021-9).
3. The Von Bargaen Ranch Septage Disposal Area has been in operation at least since 1975 (and possibly since 1950), receiving domestic septage from Glenn County septage haulers. Historical disposal practices have consisted of lime stabilization to raise the pH to a minimum of 12 for one half hour for pathogen and vector prevention, followed by land application. Effluent is spread by septic trucks, which drive to the south end of the disposal area, where they turn around and open their discharge valve and drive north while the septage is released. Oat crops are planted on half of the land application area each year during the fall, and harvested during the spring to be used as animal feed. The area where septage is land applied is mowed and tilled with a disc about once every other month. The other half of the land that is planted is rotated each year.
4. In a 12 August 1975 letter, the Central Valley Water Board notified the Discharger (Mr. F.C. Von Bargaen) that submittal of a ROWD was waved on the condition that no nuisance or pollution develops and the county sanitarian regulates disposal at the site.
5. On 26 June 1991, Central Valley Water Board staff inspected the Von Bargaen Ranch Disposal Site. Based on the inspection, staff concluded that operation of the septage disposal facility is subject to the regulations of Title 23, California Code of Regulations; therefore staff requested submittal of a ROWD.

6. The Discharger (F.C. Von Bargaen) submitted a ROWD on 10 September 1991, however the ROWD was deemed incomplete, and Central Valley Water Board staff requested additional information by 25 November 1991. Central Valley Water Board did not receive the additional requested information.
7. Central Valley Water Board staff inspected the Von Bargaen Ranch Septage Disposal Area on 18 March 2009, following transfer of regulatory oversight to the Redding office of the Central Valley Water Board and again requested a ROWD for continued operation of the septage disposal site.
8. In a 17 March 2010 letter, Central Valley Water Board staff, requested that the Discharger cease operations, stating that continued application of domestic septage to land, prior to adoption of Waste Discharge Requirements, would be considered a violation of the California Water Code.
9. Central Valley Water Board staff received ROWD on 15 April 2010 ROWD and deemed the application complete on 29 April 2010.
10. Approximately 650,000 and 694,000 gallons of septage were received at the Von Bargaen Ranch Septage Disposal facility in 2008 and 2009 respectively. Five septage hauling companies from Glenn County transported waste to the disposal site in 2008 and 2009. The average monthly volume of septage received in 2009 was 58,600 gallons with a maximum monthly volume of 71,500 gallons.

WASTE CHARACTERIZATION

11. Influent domestic septage received at the facility has not been characterized, however the waste is expected to exhibit similar characteristics of conventional septage parameters.

Parameter	Concentration (mg/L, unless otherwise noted)	
	Minimum	Maximum
Total Solids	1,132	130,475
Total Volatile Solids	353	71,402
Total Suspended Solids	310	93,378
Volatile Suspended Solids	95	51,500
Biological Oxygen Demand	440	78,600
Chemical Oxygen Demand	1,500	703,000
Total Kjeldahl Nitrogen	66	1,060
Ammonia Nitrogen	3	116
Total Phosphorus	20	760
Alkalinity	522	4,190
Grease	208	23,368
pH	2	13
Total Coliform	10 ⁷ /100 mL	10 ⁹ /100 mL
Fecal Coliform	10 ⁶ /100 mL	10 ⁸ /100 mL

Source: U.S. EPA, 1994

12. Soil in the application area is classified as Cortina, a highly permeable gravelly sandy loam. An excavated side slope along the southeast portion of the site exhibits approximately 3 to 5 feet of Cortina soil overlying interbedded channel sand and gravel.
13. Static water level measurements in the on-site irrigations well shows groundwater at 40 feet below ground surface (ft bgs).
14. The average annual precipitation is 17.92 measured at the California Data Exchange Center (CDEC) Willows 6W (WLO) station. The following table describes climate information at the Willows station from 15 October 1906 to 31 December 2009.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	54.5	60.3	65.7	72.9	81.3	89.2	95.2	93.6	89	79.2	65.5	55.4	75.2
Average Min. Temperature (F)	35.9	39	41.3	44.9	51.3	57.6	60.9	58.7	56	49.3	41.1	36.3	47.7
Average Total Precipitation (in.)	3.66	3.18	2.3	1.1	0.65	0.33	0.04	0.09	0.31	0.98	2.13	3.16	17.92

15. The average annual evaporation is approximately 50 to 60 inches according to the California Department of Water Resources Bulletin No. 73-79.
16. Domestic septage contains elements including nitrogen, phosphorus, potassium, sulfur, calcium, magnesium, manganese, boron, copper, zinc, molybdenum, and iron, many of which are beneficial for plant growth. Septage shall be applied in a fashion that correlates to agronomic growth rates for oats and native grasses. According to calculations provided in the ROWD, the maximum volume of domestic septage that may be agronomically applied to land each year is 23,000 gallons/acre (920,000 gallons for 40-acres), based on the amount of nitrogen uptake required by the crop (oats). Currently less than 700,000 gallons of septage is dispersed on the land annually.
17. A groundwater sample was obtained from the on-site agricultural well on 2 April 2010. The well is constructed to 196 feet below ground surface. Results of the analysis show pH at 6.72, electrical conductivity at 0.58 dS/m (580 µmhos/cm), chloride at 43.68 mg/L, boron at 0.01 mg/L, sodium absorption ration (SAR) at 1.05, and nitrate as nitrogen at 3.47 mg/L.

18. Soil samples were obtained from the top 12 inches of soil from three locations within the septage disposal area in April 2010. Sodium concentrations in the soil were reported as very low and low in all three samples, and soluble salts were reported as very low. The estimated nitrogen release (ENR) value was reported between 77 and 146 lbs/acre. Phosphorus, potassium, copper, iron, manganese, and zinc, values were reported as high to very high in one or more locations.
19. The nearest domestic well is located approximately 1,900 feet east of the site along County Road 35.
20. The nearest surface water body is Walker Creek approximately 2 miles west of the disposal area. The Glenn-Colusa Canal is located about 2.5 miles southeast of the disposal area.
21. Land use within 1,000 feet of the facility includes intensive agriculture
22. The septage disposal area is not located in a 100-year flood zone as described in the Federal Emergency Management Agency Flood Map FIRM Community-Panel Number 0600570581B.

REGIONALIZATION

23. Glenn County is approximately 1,300 square miles with a population of 26,950. The County is mostly rural, and regional wastewater management has not been determined to practical.

CEQA AND OTHER CONSIDERATIONS

24. Pursuant to the Glenn County Planning and Public Works Departments (Lead Agency), the Von Bargaen Septage Disposal site is exempt from the California Environmental Quality Act based on Title 14, California Code of Regulations Chapter 3, Article 19, Section 15301, Class (1)(b), which states that certain classes of projects do not have a significant effect on the environment, and are categorically exempt from the requirement for the preparation of environmental documents, including, "Existing facilities of both investor and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services."
25. The action to revise WDRs for this facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 2100, et seq.), in accordance with Title 14, California Code of Regulations, Section 15301.
26. In a 12 March 2010 letter, Glenn County Planning and Public Works Agency explains, that the Glenn County Unified Development Code regarding land use policy was adopted subsequent to the initiation of the Von Bargaen's

property use. Glenn County Planning has indicated that a use-permit from the agency is not required.

27. The Discharge is conditionally exempt from the requirements in Title 27, California Code of Regulations. Data obtained from an on-site agricultural well, shows that groundwater does not appear to be impacted from facility operations and there is no evidence that disposal practices have lead to off-site discharges of waste. This Order requires the Discharger to provide additional evidence, through such means as groundwater monitoring, to ensure continuing compliance with Basin Plan objectives, and that the waste does not need to be managed as hazardous waste.

BASIN PLAN, BENEFICIAL USES, AND WATER QUALITY OBJECTIVES

28. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.
29. The beneficial uses of the underlying groundwater are domestic and agricultural supply.
30. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in surface water and groundwater.
31. The Basin Plan contains a narrative chemical constituent objective, which is intended to protect all beneficial uses, and is the narrative objective most relevant to protection of agricultural irrigations uses. In general, water sources with an electrical conductivity of 700 $\mu\text{mhos/cm}$ or less are considered to have no impact on any crop. For drinking water supplies, the Basin Plan has adopted state drinking water standards (MCLs) as water quality objectives. Secondary drinking water standards for electrical conductivity have "recommended" (900 $\mu\text{mhos/cm}$), "upper" (1600 $\mu\text{mhos/cm}$), and "short-term" (2200 $\mu\text{mhos/cm}$) numeric concentrations.

ANTIDegradation ANALYSIS

32. The septage disposal area has existed since at lease 1975. Approximately half of the population of Glenn County is served by septic tanks, and almost all septage generated in the county is applied at the Von Bargaen Ranch Septage Disposal Area. There are no other known septage receiving facilities in Glenn County; therefore the Von Bargaen Ranch Septage Disposal Area provides a significant service to the communities in Glenn County.

33. The Discharger has not completed an anti-degradation analysis of the entire treatment facility, however constituents of concern that have the potential to degrade groundwater include salts (primarily EC, sodium, chloride, and nitrate), nutrients, and coliform organisms. Central Valley Water Board staff inspections have not identified a condition of nuisance or pollution of surface water or groundwater as a result of the disposal activities; however the facility has not been monitored on a regular basis during its time of operation. This Order requires influent monitoring, site monitoring, and groundwater monitoring. Additional monitoring is required by this Order to determine if the discharge is consistent with the anti-degradation provisions of Resolution 68-16.

PUBLIC NOTICE

34. All of the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

35. The Discharger and interested agencies and persons have been notified of the intent to revise waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

36. In a public hearing, the Regional Water Board heard and considered all comments pertaining to this facility and discharge.

IT IS HEREBY ORDERED that, Scott and Sandy Von Bargen, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions

1. The discharge of wastes from any portion of the septage disposal area to surface waters or surface water drainage courses is prohibited.
2. The discharge of waste classified as 'hazardous' under Section 2521, Chapter 15 of Title 23 or 'designated', as defined in Section 13173 of the California Water Code is prohibited.
3. The discharge of domestic septage in an area other than at the application area described in the Findings is prohibited.

- The discharge of municipal solid waste, restaurant and grease trap wastes, car wash pumpings, and other commercial or industrial wastes is prohibited.

B. Discharge Specifications

- The average weekly inflow of domestic septage shall not exceed 17,640 gallons, and the annual discharge shall not exceed 920,000 gallons.
- Septage shall not be applied to land in amounts which cause the following cumulative loadings or monthly average concentration limits to be exceeded.

Constituent	Cumulative Loadings		Concentration Limits
	kg/hectare	lbs/acre	mg/kg
Arsenic	41	37	75
Cadmium	39	35	85
Chromium*	3,000	2,670	3000
Copper	1,500	1,336	4300
Lead	300	267	840
Mercury	17	15	57
Nickel	420	374	75
Selenium*	100	89	100
Zinc	2,800	2,494	7500

Source: 40 CFR Part 503, Tables 2 & 3, Section 503.13
 *No longer included in Section 503.13

- Septage shall obtain a pH of greater than 12 for 30 minutes prior to application.
- The discharge of septage shall not exceed the annual application rate calculated using the following equation:

$$AAR = \frac{N}{0.0026}$$

Where:

AAR = Annual application rate in gallons per acre per 356 day period

N = Amount of nitrogen in pounds per acre per 365 day period need by the crop or vegetation grown on the land.

- Public contact with domestic septage shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.
- Objectionable odors originating at the facility shall not be perceivable beyond the limits of the property owned by the Discharger.

7. Closure of the septage disposal area shall be approved by the Executive Officer and shall be under the direct supervision of a registered civil engineer or certified engineering geologist.

C. Groundwater Limitations

1. The Discharge shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality. For coliform, the Basin Plan objective, for groundwaters used for domestic or municipal supply, is less than 2.2 MPN/100 mL.

D. Provisions

1. The Discharger shall comply with the following task schedule, which includes submittal of a groundwater detection monitoring system work plan, within **3 months of the effective date of this Order**, the work plan shall include plans for monitoring groundwater in the vicinity of the septage disposal area, including at least one upgradient monitoring location.

Task	Due Date
Submittal of a work plan for a groundwater detection monitoring system	Within 3 months of the effective date of this Order
Complete construction of a groundwater monitoring network	Within 6 months of the effective date of this Order
Obtain samples from the groundwater monitoring network	Within 9 months of the effective date of this Order

2. The Discharger shall comply with the applicable sections of 40 Code of Federal Regulations, Section 503, *Standards for the Use or Disposal of Sewage Sludge*. These standards establish management criteria for the protection of ground and surface waters, set application and cumulative loading rates for heavy metals, and establish stabilization and disinfection criteria.
3. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, for the domestic wastewater disposal, which are hereby incorporated into this Order
4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2011-0058 which is attached to and made part of this Order.
5. The Discharger shall maintain legible records of the volume and type of septage discharged and the manner and location of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available

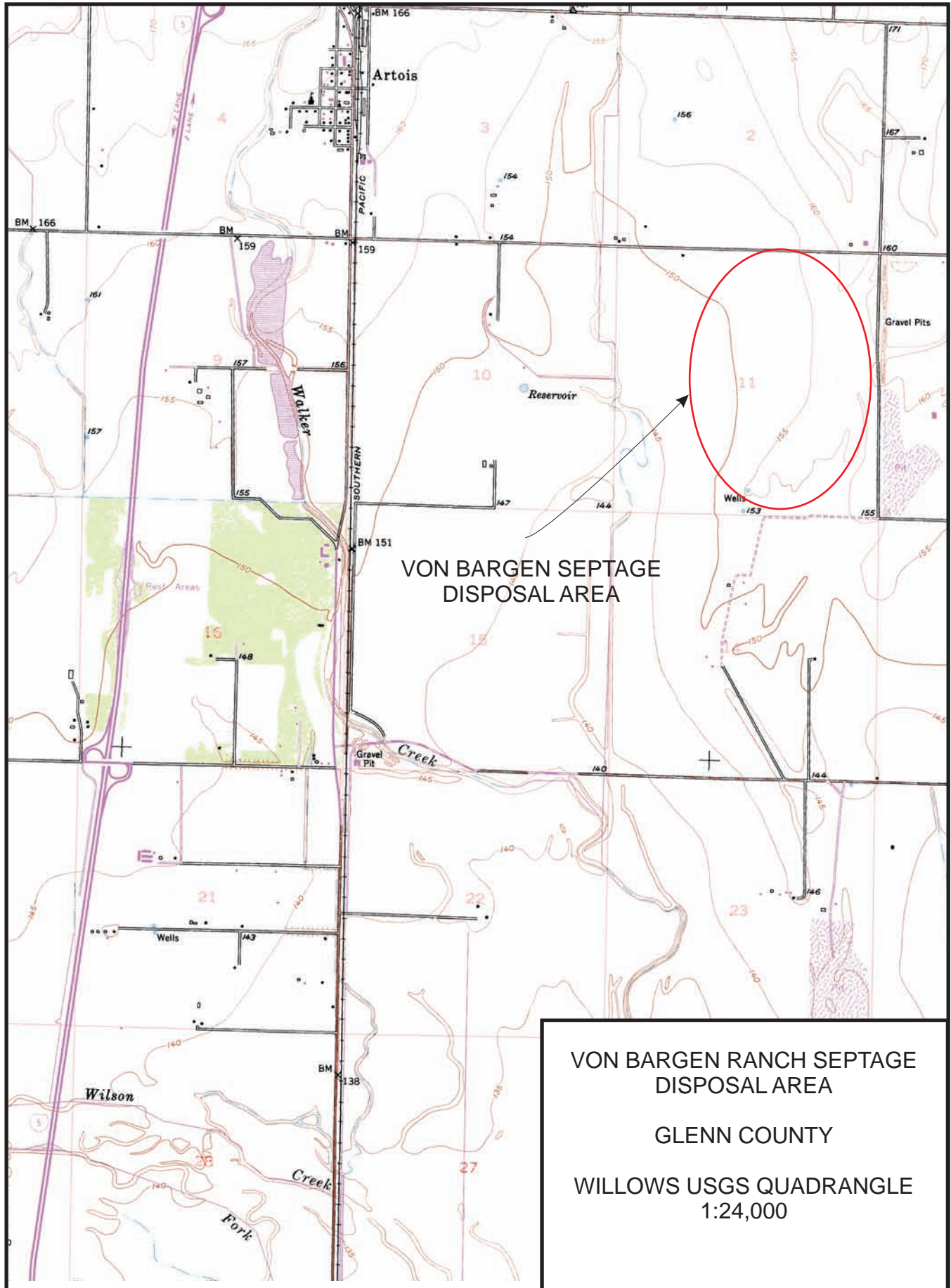
for review by representatives of the Regional Board and of the State Water Resources Control Board at anytime during normal business hours.

6. In the event of any change in control or ownership of the septage disposal facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provisions B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.
7. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
8. The Regional Water Board will review this Order periodically and will revise requirements when necessary.

I PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 5 August 2011.

Original signed by

PAMELA C. CREEDON, Executive Officer



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM ORDER NO. R5-2011-0058
FOR
VON BARGEN RANCH SEPTAGE DISPOSAL AREA
GLENN COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring domestic septage, waste application area, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

Central Valley Water Board staff shall approve specific sampling locations prior to any sampling activities. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test dissolved oxygen, pH, and electrical conductivity) may be used provided that:

1. The user is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

Field calibration reports are submitted as described in the "Reporting" section of this MRP.

SEPTAGE MONITORING

A representative sample of septage to be applied to land shall be analyzed according to the following schedule:

Constituent	Units	Frequency
Percent Solids	%	Annually
pH of Septage Applied [*]	S.U.	Semiannually
Nitrogen as Nitrate	mg/kg	Annually
Total Kjeldahl Nitrogen	mg/kg	Annually
Volatile Organic Compounds	µg/kg	Annually
Title 22 / CAM 17 Heavy Metals	mg/kg	Annually

^{*} Each quarter the pH of septage to be applied shall be measured in each truck delivering septage during an 8-hour work day.

The hauler shall record the date, location of septic tank, type of waste, volume in gallons of septage pumped, and certification that pH has been adjusted to 12.0 for one-half hour prior to disposal.

APPLICATION INFORMATION

The Discharger shall record and quantify the following parameters:

Parameter	Units	Frequency
Quantity of Septage Applied	gallons	Monthly
Application Area	Acres	Monthly
Crop planted	--	Annually
Amount of Crop Produced	--	Annually
Nitrogen Loading	lb / acre	Annually

GROUNDWATER MONITORING

The Discharger shall install a groundwater detection monitoring network. Groundwater monitoring shall include at a minimum, the following:

Constituent	Units	Type of Sample	Frequency
Groundwater Elevation	0.01 feet MSL	Measurement	Quarterly
Groundwater Gradient	feet/foot	Calculated	Quarterly
Groundwater Gradient Direction	degrees	Calculated	Quarterly
pH	S.U.	Grab	Quarterly
EC	µmhos/cm	Grab	Quarterly
Nitrogen	mg/L	Grab	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly
Total Coliform	MPN/100 mL	Grab	Quarterly
General Minerals ¹	mg/L	Grab	Quarterly
Title 22 Heavy Metals	µg/L	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Chemical Oxygen Demand (COD)	mg/L	Grab	Quarterly

¹General Minerals shall include, at a minimum, boron, bromide, calcium, chloride, fluoride, magnesium, phosphate, potassium, sodium, sulfate, total alkalinity, and hardness as CaCO₃.

After two years of monitoring, if groundwater parameters and constituent concentrations are uniform and meet water quality objectives, the frequency of monitoring may be reduced following approval by the Executive Officer.

REPORTING

The discharger shall submit **quarterly** monitoring reports with data arranged in tabular form so that the date, the constituents, and the concentrations are readily discernible. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Central Valley Water Board. Quarterly monitoring reports shall be submitted on **15 April, 15 July, 15 October, and 15 January** respectively for the first, second, third, and fourth quarter.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision B.3.

The Discharger shall implement the above monitoring program as of the date of this Order.

Original signed by

PAMELA C. CREEDON, Executive Officer

August 5, 2011

Date

INFORMATION SHEET

VON BARGEN RANCH SEPTAGE DISPOSAL AREA GLENN COUNTY

Scott and Sandy Von Bargaen own and operate the Von Bargaen Septage Ranch Septage Disposal Area, located approximately 2 miles southeast of Artois in Glenn County. Septage haulers throughout Glenn County have transported domestic septage / wastewater to the 40-acre disposal area since at least 1975 and possibly since 1950. Historical disposal practices have consisted of lime stabilization to raise the pH to a minimum of 12.0 for one half hour for pathogen and vector prevention, followed by land application. Domestic septage is spread by septic trucks, which drive to the south end of the disposal area, where they turn around and open their discharge valve, and drive north while the septage is released. Current practices also include planting oat crops on half of the land application area each year during the fall. The oats are harvested during the spring and used as animal feed. The area where septage is land applied is moved and tilled with a disc about once every other month. The other half of the land that is planted is rotated each year.

In a 12 August 1975 letter, the Central Valley Water Board notified the Discharger (F.C. Von Bargaen) that submittal of an Application/Report of Waste Discharge (ROWD) was waved on the condition that no nuisance or pollution develops and the county sanitarian regulates disposal at the site. On 26 June 1991, Central Valley Water Board staff inspected the Von Bargaen Ranch Disposal Site and concluded that operation of the septage disposal facility is subject to the regulations of Title 23, California Code of Regulations; and therefore requested submittal of an ROWD. The Discharger submitted an Application/ROWD on 10 September 1991, however the Application/ROWD was deemed incomplete, and Central Valley Water Board staff requested additional information by 25 November 1991, which was not received. Central Valley Water Board staff inspected the Von Bargaen Ranch on 18 March 2009 upon transfer of regulatory oversight to the Redding office of the Central Valley Water Board, and again requested an Application / ROWD for continued operation of the septage disposal site. Central Valley Regional Water Board staff received a 15 April 2010 Application / ROWD, which was deemed complete on 29 April 2010, following a 17 March 2010 staff letter stating that continued operations without Waste Discharge Requirements was subject to enforcement by the Executive Officer.

Approximately 700,000 gallons of septage were disposed at the Von Bargaen Ranch Septage Disposal area in 2009, averaging about 58,000 gallons per month. Based on reported nitrogen uptake rates for oats and native grasses (60 lbs N/acre/year), the maximum volume of septage that may be agronomically applied for oat growth equates to 23,000 gallons of septage/acre/year. Native grasses grow in the remaining half of the application area during the year. The nitrogen uptake rate for grasses is assumed to be similar to oats.

Static water level measurements in the on-site irrigations well shows groundwater at 40 feet below ground surface (ft bgs).

The average annual precipitation is 17.92 measured at the California Data Exchange Center (CDEC) Willows 6W (WLO) station. The average annual evaporation is 50 to 60 inches according to the California Department of Water Resources Bulletin No. 73-79.